

CLAIMS:

1. A method of preventing a first action associated with a first message from being performed in a target entity, the method including the steps of:
  - 5 sending the first message to the target entity, the first message being configured to cause the entity to perform the first action and a second action; and
  - sending a second message to the target entity, the second message being configured to cause the entity to perform a third action;
  - 10 wherein the entity is configured such that performance of the second action and the third action is mutually incompatible.
2. A method of attempting first write and a second write to first and second security fields in a target entity, the method including the steps of:
  - 15 sending a first message to the target entity, the first message being configured to cause the entity to perform an action and to update the first and second security fields; and
  - sending a second message to the target entity, the second message being configured to cause the entity to update the first and second security fields;
  - 20 wherein the security fields have write restrictions associated with them such that updating the security fields in accordance with the first message prevents subsequent updating of the security fields in accordance with the second message, and wherein updating the security fields in accordance with the second message prevents subsequent updating of the security fields with the first message, and wherein the first action is only performed when updating of the security fields by the first message is successful.
- 25 3. A method of performing a second attempted write to two security fields in a target entity to prevent subsequent application of an earlier attempted write to a data field, wherein:
  - each of the first and second security fields has a monotonically changeable write restriction associated with it; and
  - the first attempted write included a first data value for the data field and first and second security values for the first and second security fields respectively;
  - 30 the method including the step of sending a second write to the target entity, the second write including third and fourth security values for the first and second security fields respectively, wherein the write restrictions are such that application of the third and fourth security values to the first and second fields are mutually incompatible with application of the first and second security values to the first and second security fields, such that if any of the fields cannot be written to, none of them are written to.
  - 35
4. A method according to claim 3, wherein the write restrictions:
  - prevent the second write from being performed in the event that the first write was previously performed; and

prevent the first write from subsequently being performed in the event that the second write is performed.

5. A method according to claim 3, wherein the second write is sent in response to a notification that the first write was not successfully performed.

6. A method according to claim 3, wherein the second write is sent in response to a notification that the first write was not received.

7. A method according to claim 3, wherein the second write is sent after a predetermined time has elapsed after sending the first write without receiving confirmation of the first write being received or successfully performed.

8. A method according to claim 3, further including the step of sending the second write a plurality of times until the second write is successfully received and/or performed.

9. A method according to claim 6, further including the step of verifying the successful second write by performing an authenticated read of the first and second security fields.

10. A method according to claim 6, further including updating a value related to the data field.

11. A method according to claim 1, wherein the write permissions are such that only decrementing or incrementing of the security fields are permitted.

12. A method according to claim 11, wherein the write permissions are such that only decrementing of the security fields is permitted, and wherein:

the value in the first security field prior to the first attempted write was  $x$ ;

the value in the second security field prior to the first attempted write was  $y$ ;

the value of the first security data was  $x-a$ ;

the value of the second security data was  $y-b$ ;

the value of the third security data being  $x-c$ ; and

the value of the fourth security data being  $y-d$ ;

wherein  $a < b$ ,  $d < c$  and  $a, b, c$  and  $d$  are  $> 0$ .

12. A method according to claim 12, wherein  $a=d$  and  $b=c$ .

14. A method according to claim 13, wherein  $a=d=1$  and  $b=c=2$ .

15. A method according to claim 3, wherein the target entity is a first integrated circuit and the messages are sent by a second integrated circuit.

16. A method according to claim 15, wherein the second integrated circuit is printer controller.
17. A method according to claim 16, wherein the second integrated circuit is installed in a cartridge that is  
5 releasably attachable to a printer in which the printer controller is installed, such that the messages can be sent  
via a communications link between the printer controller and cartridge.
18. A method according to claim 17, wherein the data field stores an indicator of ink remaining in the  
cartridge.

10